

## Remarks

### Status of the Claims

Claims 1-7 are pending in the application. Claim 1 is currently amended. Reconsideration and allowance of all of the pending claims are respectfully requested.

This amendment does not add new matter to the application. The amendment to claim 1 is supported at page 8, second full paragraph of the specification. Accordingly, no new matter is added and entry of this amendment is respectfully requested.

### Claim Rejections - 35 U.S.C. §102/§103

Claims 1-4, 6, and 7 are rejected under 35 U.S.C. §102(b) as being anticipated by each of JP '924 (JP 01-204924) and JP '428 (JP 03-115428). Claims 1, 2, 4, and 5 are rejected under 35 U.S.C. §103(a) as being unpatentable over Caster '851 (U.S. Patent No. 7,025,851). Claims 3, 6, and 7 are also rejected under 35 U.S.C. §103(a) as being unpatentable over Caster '851 in view of Woodson '443 (U.S. Patent No. 6,020,443). Claims 1 and 2 are rejected under 35 U.S.C. §103(a) as unpatentable over Grubbs '785 (U.S. Patent No. 5,728,785). Claims 3, 6, and 7 are also rejected under 35 U.S.C. §103(a) as unpatentable over Grubbs '785 in view of Woodson '443. Applicants respectfully traverse each of these rejections for the following reasons.

#### *1. The Present Invention*

The present invention provides a crosslinkable resin composition which is obtained by ring-opening bulk polymerizing a composition comprising a cycloolefin monomer, a radical generating agent, and a compound having two or more vinyl groups. See claim 1. The crosslinkable resin composition may also include a metathesis polymerization catalyst. See claim 2.

Claim 1 is currently amended to clarify that the presently claimed compositions are characterized by the amount of the compound having two or more vinyl groups that is used. Claim 1 now recites that 0.1 to 10 parts by weight, relative to 100 parts by weight of the

cycloolefin monomer, of the compound having two or more vinyl groups is included. The amount of the compound having two or more vinyl groups that is included is an amount that is appropriate relative to the amount of the cycloolefin monomer. See Claim 1, and specification, page 7. The present compositions tend to decrease in heat resistance and mechanical characteristics if the amount of the compound having two or more vinyl groups is too high compared with that presently claimed. See specification, page 8.

2. JP '924

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." MPEP §2131, citing *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). Applicant respectfully submits that each and every element of the presently claimed invention is not expressly or inherently disclosed by either JP '924 or JP '428. The prior art does not disclose a crosslinkable resin composition obtained by ring-opening metathesis polymerizing a cycloolefin monomer in the presence of 0.1 to 10 parts by weight of a compound having two or more vinyl groups, and a radical generating agent. Applicant submits that this rejection must be withdrawn.

The Examiner asserts in the Office Action that JP'924 describes a soluble elastomer containing 10 mol% or less of repeating units having carbon-carbon double bonds. See Office Action, page 3, line 5. The Examiner then asserts that the elastomer of JP'924 can be considered a species of the composition of claim 1. See Office Action page 3, line 8.

However, Applicant respectfully disagrees with the assertion by the Examiner that the elastomer of JP'924 can be considered a species of the composition of claim 1. The elastomer described in JP'924 is limited to elastomers having no double bonds, such as an ethylene-propylene rubber, or elastomers having double bonds only in a main chain, such as an ethylene-propylene-diene terpolymer. However the elastomers in JP '924 are formed in the presence of an elastomer, not a compound having two or more vinyl groups as presently recited in claim 1. Therefore, JP '924 does not disclose all of the elements of the present claims and cannot anticipate the presently claimed invention.

In addition, JP'924 does not disclose or suggest forming a polymer with the presently claimed ratio of a compound with two or more vinyl groups with the cycloolefin monomer as recited in claim 1. Accordingly, JP'924 does not disclose each and every element of claim 1. Applicant respectfully submits that this rejection must be withdrawn.

*3. JP '428*

There is no disclosure in JP'428 of forming an elastomer from a compound with two or more vinyl groups in the amount presently claimed that is measured relative to the amount of the cycloolefin monomer. See claim 1. The amount of radical-polymerizable vinyl monomer used in JP'428 is, in fact, far larger than the 0.1 to 10 parts by weight relative to 100 parts by weight of the cycloolefin monomer presently claimed. See JP'428, Abstract. See also, JP '428, Examples. This is because in JP '428 the radical-polymerizable vinyl monomer is used, not as a transfer agent, but as a monomer. One of skill in the art would immediately understand that much larger amounts of monomer would necessarily have to be used than transfer agent.

Furthermore, JP'428 does not disclose a crosslinkable resin composition formed from a cycloolefin monomer and a radical generating agent. A compound capable of generating a radical in JP'428 is used for the polymerization of vinyl monomer before the complete formation of a cycloolefin resin. See JP'428, Abstract. The JP'428 abstract describes that "a radical-polymerized polymer is formed simultaneously with metathesis-polymerized polymer." This is quite different from the present invention.

Hence, JP '428 does not disclose obtaining a crosslinkable resin composition by ring-opening metathesis polymerizing a cycloolefin monomer in the presence of 0.1 to 10 parts by weight of a compound having two or more vinyl groups, and a radical generating agent. Applicant submits that each and every element of the present claims is not disclosed by the prior art and this rejection must be withdrawn.

*4. Caster '851 and Caster '851 in view of Woodson '443*

"To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art." MPEP §2143.03. Applicant submits that the prior art does not disclose or suggest all of the elements of the present claims. Accordingly, a *prima facie* case of obviousness has not been established and these rejections must be withdrawn.

Caster '851 does not disclose or suggest the presently claimed ratio of a compound having two or more vinyl groups to cycloolefin monomer. See claim 1, as amended. The compounds which the Examiner asserts as equivalents of the presently claimed compound having two or more vinyl groups are in fact used, not as not a transfer agent, but as monomer.

One of ordinary skill in the art would immediately understand that a large amount of monomer having two or more vinyl groups would necessarily be used in Caster '851. Accordingly, Caster '851 does not disclose or suggest obtaining a crosslinkable resin composition by ring-opening metathesis polymerizing a cycloolefin monomer in the presence of 0.1 to 10 parts by weight of a compound having two or more vinyl groups. As mentioned, if the amount of a compound having two or more vinyl groups is outside of the presently claimed range, the crosslinked resin molded product tends to decrease in its heat resistance and mechanical characteristics. See Specification, page 8.

Woodson '443 discloses a molding utility of compositions that the Examiner asserts as similar to those presently claimed. See Office Action, pages 5-6, bridge paragraph. Accordingly, Woodson '443 does not make up for the above described deficiencies of Caster '851 to disclose or suggest the presently claimed invention. Applicant respectfully submits that the prior art rejection of claims 1, 2, 4, and 5 over Caster '851 and the rejection of claims 3, 6, and 7 over Caster '851 in view of Woodson '443 must be withdrawn.

*5. Grubbs '785 and Grubbs '785 in view of Woodson '443*

Grubbs '785 also does not disclose or suggest the presently claimed ratio of a compound having two or more vinyl groups in a molecule to a cycloolefin monomer. The compounds which

the Examiner asserts as equivalents of the presently claimed compound having two or more vinyl groups are in fact intended for use, not as not a transfer agent, but as monomer.

One of ordinary skill in the art would understand that a large amount of monomer having two or more vinyl groups in a molecule would necessarily have to be used in Grubbs '785, as in Caster '851. Accordingly, Grubbs '785 does not disclose or suggest obtaining a crosslinkable resin composition by ring-opening metathesis polymerizing a cycloolefin monomer in the presence of 0.1 to 10 parts by weight of a compound having two or more vinyl groups. As mentioned, if the amount used is outside of the presently claimed range, the crosslinked resin molded product tends to decrease in its heat resistance and mechanical characteristics.

Woodson '443 , as described above, is limited to the disclosure of a molding utility of compositions that the Examiner asserts are similar to those presently claimed. Accordingly, Woodson '443 does not make up for the deficiencies of Grubbs '785 to disclose or suggest the presently claimed invention. Applicant respectfully submits that the prior art rejection of claims 1 and 2 over Grubbs '785, and the prior art rejection of claims 3, 6, and 7 over Grubbs '785 in view of Woodson '443 must be withdrawn.

#### *6. Summary*

Applicant respectfully submits that the prior art does not disclose or suggest the invention of the present claims. The prior art does not disclose or suggest a crosslinkable resin composition obtained by ring-opening metathesis polymerizing a cycloolefin monomer in the presence of 0.1 to 10 parts by weight of a compound having two or more vinyl groups along with a radical generating agent (B). Applicant submits that the pending prior art rejections must be withdrawn and the application passed to issue.

In reviewing the above-captioned application, the undersigned has noted that acknowledgement was not received for the PTO Forms 1449 filed with the Information Disclosure Statements on February 9, 2006 and May 4, 2006. Accordingly, a copy of each unacknowledged PTO Forms 1449 is attached hereto. The Examiner is respectfully requested to return the initialed forms to the undersigned as soon as possible.

Application No. 10/567,782  
Amendment dated March 5, 2007  
Reply to Office Action of January 3, 2007

Docket No.: 4670-0119PUS1

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Mark J. Konieczny (Reg. No. 47,715) at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37.C.F.R. §§1.16 or 1.14; particularly, extension of time fees.

Dated: March 5, 2007

Respectfully submitted,

By 

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Enclosures: PTO Forms

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Substitute for form 1449A/B/PTO				Complete If Known	
				Application Number	NEW 101567782
				Filing Date	February 9, 2006
				First Named Inventor	Tomoo SUGAWARA
				Art Unit	N/A
				Examiner Name	Not Yet Assigned
Sheet	1	of	1	Attorney Docket Number	4670-0119PUS1

U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No. <sup>1</sup>	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number-Knd Code <sup>2</sup> (if known)			
FT	AA*	US-5,204,427-A	04-20-1993	Tori et al.	

FOREIGN PATENT DOCUMENTS					
Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Country Code <sup>3</sup> -Number <sup>4</sup> -Knd Code <sup>5</sup> (if known)			
FT	BA	JP-5-209128-A	08-20-1993		ABS
FT	BB	JP-1-204924-A	08-17-1989		ABS
FT	BC	JP-3-115428-A	05-16-1991		ABS
FT	BD	JP-3-146516-A	06-21-1991		ABS

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. \* CITE NO.: Those application(s) which are marked with an single asterisk (\*) next to the Cite No. are not supplied (under 37 CFR 1.98(a)(2)(iii)) because that application was filed after June 30, 2003 or is available in the IFW. \* Applicant's unique citation designation number (optional). <sup>2</sup> See Kinds Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901.04. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.

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<sup>1</sup>Applicant's unique citation designation number (optional). <sup>2</sup>Applicant is to place a check mark here if English language Translation is attached.

Examiner Signature	/Fred Teskin/	Date Considered	09/26/2006
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Birch, Stewart, Kolasch & Birch, LLP

MSW/smt



PTO/SB/08a/b (07-05)

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Substitute for form 1449A/B/PTO				<b>Complete if Known</b>	
				Application Number	10/567,782
				Filing Date	February 9, 2006
				First Named Inventor	Tomoo SUGAWARA
				Art Unit	N/A
				Examiner Name	Not Yet Assigned
Sheet	1	of	1	Attorney Docket Number	4670-0119PUS1

<b>U.S. PATENT DOCUMENTS</b>					
Examiner Initials*	Cite No. <sup>1</sup>	Document Number Number-Kind Code <sup>2</sup> (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear

<b>FOREIGN PATENT DOCUMENTS</b>					
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FT	BA	WO-98/05715	02-12-1998		T <sup>6</sup>
FT	BB	JP-2000-72859-A	03-07-2000		

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Birch, Stewart, Kolasch &amp; Birch, LLP

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